

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. through 167. (cancelled)

168. (new): A communication control method, comprising:

providing a vacant period, in which no communication data is present, in a data transmission from a base station to a mobile station;

inserting a first pilot signal, such that a beginning of the first pilot signal is contiguous with an end of a data transmission prior to the vacant period; and

inserting a second pilot, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period.

169. (new): The communication control method according to claim 168, further comprising:

extracting at least one of the first and second pilot signals from the data transmission;

measuring a reception quality of the data transmission on the basis of the at least one extracted pilot signal;

generating a transmission power control signal, which controls transmission power of a signal from the base station to the mobile station, on the basis of the measured reception quality; and

transmitting the transmission power control signal from the mobile station to the base station.

170. (new): The communication control method according to claim 168, further comprising:

before providing the vacant period,

transmitting a notification signal from the mobile station to the base station based on a detection of a degradation in link quality and

switching the base station from a standard transmission mode to a transmission mode having a vacant period based on the transmitted notification signal.

171. (new): A communication control method, comprising:

providing a vacant period, in which no communication data is present, in a data transmission from a base station to a mobile station and

inserting a pilot signal, such that an end of the pilot signal is contiguous with a beginning of a data transmission after the vacant period.

172. (new): The communication control method according to claim 171, further comprising:

extracting the pilot signal from the data transmission;

measuring a reception quality of the data transmission on the basis of the extracted pilot signal;

generating a transmission power control signal, which controls transmission power of a signal from the base station to the mobile station, on the basis of the measured reception quality; and

transmitting the transmission power control signal from the mobile station to the base station.

173. (new): The communication control method according to claim 171, further comprising:

before providing the vacant period,

transmitting a notification signal from the mobile station to the base station based on a detection of a degradation in link quality and

switching the base station from a standard transmission mode to a transmission mode having a vacant period based on the transmitted notification signal.

174. (new): A communication control system, comprising:
a base station, comprising:

a circuit which provides a vacant period, in which no communication data is present, in a data transmission from the base station to a mobile station and

a second circuit which provides a first pilot signal, such that a beginning on the first pilot signal is contiguous with an end of a data transmission prior to the vacant period, and which inserts a second pilot signal, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period.

175. (new): The communication control system according to claim 174, further comprising:

the mobile station, comprising:

a transmission and reception circuit which receives the data transmission from the base station,

a pilot signal extracting portion which extracts at least one of the first and second pilot signals from the received data transmission,

an SIR measuring portion which measures a reception quality of the received data transmission, on the basis of the at least one extracted pilot signal, and

a transmission power control signal generating portion which generates a transmission power control signal, to be transmitted from the mobile station to the base station, on the basis of the measured reception quality;

wherein the transmission power control signal controls transmission power of a signal from the base station to the mobile station.

176. (new): The communication control system according to claim 174, wherein:
the base station further comprises a transmission and reception circuit which receives a notification from the mobile station to enter a transmission mode including a vacant period and the vacant period is provided upon the receipt of the notification from the mobile station.

177. (new): A communication control system, comprising:

a base station, comprising:

a circuit which provides a vacant period, in which no communication data is present, in a data transmission from the base station to a mobile station and

a control signal inserting portion which inserts a pilot signal, such that an end of the pilot signal is contiguous with a beginning of a data transmission after the vacant period.

178. (new): The communication control system according to claim 177, further comprising:

a mobile station, comprising:

a transmission and reception circuit which receives the data transmission from the base station,

a pilot signal extracting portion which extracts the pilot signal from the received data transmission,

an SIR measuring portion which measures a reception quality of the received data transmission on the basis of the pilot signal, and

a transmission power control signal generating portion which generates a transmission power control signal, to be transmitted from the mobile station to the base station, on the basis of the measured reception quality;

wherein the transmission power control signal controls transmission power of a signal from the base station to the mobile station.

179. (new): The communication control system according to claim 177, wherein:

the base station further comprises a transmission and reception circuit which receives a notification from a mobile station to enter a transmission mode including a vacant period and

the vacant period is provided upon the receipt of the notification from the mobile station.

180. (new): A mobile station in a mobile communication system, comprising:

a transmission and reception circuit which receives a data transmission from a base station;

wherein the data transmission includes:

a vacant period in which no data communication is present,

a first pilot signal inserted such that a beginning of the first pilot signal is contiguous with an end of a data transmission prior to the vacant period, and
a second pilot signal, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period,
a pilot signal extracting portion which extracts at least one of the first and second pilot signals from the received data transmission;
an SIR measuring portion which measures a reception quality of the received data transmission on the basis of the at least one extracted pilot signal; and
a transmission power control signal generating portion which generates a transmission power control signal to be transmitted to the base station, on the basis of the measured reception quality.

181. (new): A mobile station in a mobile communication system, comprising:
a transmission and reception circuit which receives a data transmission from a base station;
wherein the data transmission includes:
a vacant period in which no data communication is present, and
a pilot signal, such that an end of the pilot signal is contiguous with a beginning of a data transmission after the vacant period,
a pilot signal extracting portion which extracts the pilot signal from the received data transmission;

an SIR measuring portion which measures a reception quality of the received data transmission on the basis of the extracted pilot signal; and

a transmission power control signal generating portion which generates a transmission power control signal to be transmitted to the base station, on the basis of the measured reception quality.

182. (new): A control method of a mobile station in a mobile communication system, comprising:

receiving a data transmission from a base station, wherein the data transmission includes:

a vacant period in which no data communication is present,

a first pilot signal inserted, such that a beginning of the first pilot signal is contiguous with an end of a data transmission prior to the vacant period, and

a second pilot signal, such that an end of the second pilot signal is contiguous with a beginning of a data transmission after the vacant period;

extracting at least one of the first and second pilot signals from the received data transmission;

measuring a reception quality of the received data transmission on the basis of the at least one extracted pilot signal;

generating a transmission power control signal on the basis of the measured reception quality; and

transmitting the generated transmission power control signal to the base station.

183. (new): The control method according to claim 182, further comprising:
prior to receiving the data transmission from the base station, detecting a degradation of link quality and
upon the detection of a degradation in link quality, transmitting a notification signal to the base station to switch from a standard transmission mode to a transmission mode having a vacant period.

184. (new): A communication control method of a mobile station in a mobile communication system, comprising:
receiving a data transmission from a base station, wherein the data transmission includes:
a vacant period in which no data communication is present and
a pilot signal, such that an end of the pilot signal is contiguous with a beginning of a data transmission after the vacant period;
extracting the pilot signal from the received data transmission;
measuring a reception quality of the received data transmission on the basis of the extracted pilot signal;
generating a transmission power control signal on the basis of the measured reception quality; and
transmitting the generated transmission power control signal to the base station.

185. (new): The control method according to claim 184, further comprising:
prior to receiving the data transmission from the base station, detecting a degradation of
link quality and

upon the detection of a degradation in link quality, transmitting a notification signal to
the base station to switch from a standard transmission mode to a transmission mode having a
vacant period.

186. (new): A communication control system, comprising:
a base station, comprising:

means for providing a vacant period, in which no communication data is present,
in a data transmission from the base station to a mobile station and

means for providing a first pilot signal, such that a beginning of the first pilot
signal is contiguous with an end of a data transmission prior to the vacant period, and for
inserting a second pilot signal, such that an end of the second pilot signal is contiguous
with a beginning of a data transmission after the vacant period.

187. (new): The communication control system according to claim 186, further
comprising:

a mobile station, comprising:

means for receiving the data transmission from the base station;

means for extracting at least one of the first and second pilot signals from the received data transmission;

means for measuring a reception quality of the received data transmission, on the basis of the at least one extracted pilot signal; and

means for generating and transmitting a transmission power control signal from the mobile station to the base station, on the basis of the measured reception quality;

wherein the transmission power control signal controls transmission power of a signal from the base station to the mobile station.

188. (new): The communication control system according to claim 186, wherein the base station further comprises:

means for receiving a notification from a mobile station to enter a transmission mode including a vacant period;

wherein the vacant period is provided by the base station upon the receipt of the notification from the mobile station.

189. (new): A communication control system, comprising:

a base station, comprising:

means for providing a vacant period, in which no communication data is present, in a data transmission from the base station to a mobile station and

means for inserting a pilot signal, such that an end of the pilot signal is contiguous with a beginning of a data transmission after the vacant period.

190. (new): The communication control system according to claim 189, further comprising:

a mobile station, comprising:

means for receiving the data transmission from the base station;

means for extracting the pilot signal from the received data transmission;

means for measuring a reception quality of the received data transmission on the basis of the extracted pilot signal; and

means for generating and transmitting a transmission power control signal from the mobile station to the base station, on the basis of the measured reception quality;

wherein the transmission power control signal controls transmission power of a signal from the base station to the mobile station.

191. (new): The communication control system according to claim 189, wherein the base station further comprises:

means for receiving a notification from the mobile station to enter a transmission mode including the vacant period,

wherein the vacant period is provided by the base station upon the receipt of the notification from the mobile station.

192. (new): A mobile station in a mobile communication system, comprising:

means for receiving a data transmission from a base station,

wherein the data transmission includes

a vacant period in which no data communication is present,

a first pilot signal inserted, such that a beginning of the first pilot signal is
contiguous with an end of a data transmission prior to the vacant period, and

a second pilot signal inserted, such that an end of the second pilot signal is
contiguous with a beginning of a data transmission after the vacant period;

means for extracting at least one of the first and second pilot signals from the received
data transmission;

means for measuring a reception quality of the received data transmission on the basis of
the at least one extracted pilot signal; and

means for generating and transmitting a transmission power control signal to the base
station, on the basis of the measured reception quality.

193. (new): A mobile station in a mobile communication system, comprising:

means for receiving a data transmission from a base station,

wherein the data transmission includes

a vacant period in which no data communication is present and

a pilot signal inserted, such that an end of the pilot signal is contiguous
with a beginning of a data transmission after the vacant period;

means for extracting the pilot signal from the received data transmission;

means for measuring a reception quality of the received data transmission on the basis of
the extracted pilot signal; and

means for generating and transmitting a transmission power control signal to the base
station, on the basis of the measured reception quality.